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ABSTRACT

College students in introductory foreign language courses (French, German, and Spanish) were the subjects of a study to determine what if any correlation exists between ability and motivation on the one hand and achievement on the other in learning a second language. The ability measure (predicted grade point average) was found to correlate significantly with final course percentage grade but not with self-rated effort (SRE). Motivational measures correlated significantly with the SRE criterion but not with final course percentage. Ability did not correlate more highly with both SRE and final course percentage than did any motivational component of the model. These findings support the notion that ability is a general component of a complete expectancy theory model. The failure of the motivational components to add to the prediction of course performance may be explained by the fact that, for the majority of the students, this was not an introduction to foreign language; previous learning experience would factor into SRE ratings. It will be important for future research to use an academic situation where such previous background might not mask potential relationships between motivational components and course performance. (Author/JB)

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Predicting Student's Effort and Performance in Foreign Language Courses: An Application of Expectancy Theory of Motivation*

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Expectancy theory of motivation has been widely used to explain a variety of behaviors related to work performance. In fact, some researchers claim that expectnacy theory plays the dominant and, currently, the most influential role in industrial and organizational psychology. However, outside of the industrial and organizational psychology areas, expectancy theory seems to have received little attention. For example, in the area of foreign language learning, no report was located that utilized expectancy theory either in its theoretical orientation or in its operational procedures. Since expectancy theory models incorporate both motivational and ability components, it would appear to have considerable relevance for investigating the outcomes of attempting to learn a foreign language. Therefore, the major purpose of the present study was to use an expectancy theory model to test hypotheses related to prediction of student's effort and performance in foreing language courses.

Background of the Study

Much research has been generated on a motivational performance model called expectancy theory. Expectancy theorists beginning with Tolman (1932), Peak (1955) and more recently Atkinson (1958) and Vroom (1964) have attempted to explain the role of cognitive determinants within the concept of motivation. Very briefly, the theory suggests that an individual will be motivated to exert high effort if he perceives that doing so will pay off in some desired outcomes. On task performance, an individual makes choices among

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*Running head: Application of Expectancy Theory to Foreign Language Learning

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behavioral alternatives on the basis of his subjective expectancies that a given level of effort will result in a given outcome and on the desirability or valence of that outcome. That is, a person's behavior on a task is a function of two variables: 1) the expectancy that the work behavior will lead to attaining work outcomes, and 2) the valence or perceived value of those outcomes.

Although a number of expectancy theories and variations of them have been developed, they all share the basic assumptions of expectancies and valence as the major determinants of human behavior. It is beyound the scope of this paper to review the research on expectancy theory or to evaluate the numerous theoretical and measurement issues available in the literature. Interested readers are referred to expectancy theory reviews (see Miner & Dachler, 1973; Michell, 1974; Wahba & House, 1974; Connolly, 1976).

Because expectancy theory has primarily been applied in work performance situations, there has been only limited work done in academic settings either using the full expectancy model or components of it. Examples: Batlis and Waters (1973); Drory (1976); Matsui and Ikeda (1976); Mitchell and Nebeker (1973); Raynor (1970) and Schmitt (1975).

These studies showed some small degree of support for either the full expectancy theory model or components of it in the prediction of academic performance. However, one of the major difficulties in the interpretation of these studies data is the fact that only one of these investigations put the important ability components into the model (Mitchell & Nebeker, 1973). In that case, the ability factor provided moderate correlations with academic

success (r.57) but the expectancy attitudes did not add to predictability. Thus, there is a need to use the full model, including ability, more systematically in settings where academic performance prediction is desired. And finally, since studies so far have used psychology students as participants, one question is raised as to whether support (limited as it is) for the expectancy theory model can be found using other types of students and especially in other academic settings where course activities might pose learning strategies different than those posed in introductory psychology.

So far, no report has been found that has applied an expectancy theory model in foreign language area. Therefore, the purpose of this study was to utilize an expectancy theory model that incorporated both ability and motivational factors to predict students' performance in introductory French, German and Spanish courses.

Hypotheses

The hypotheses tested in this study were formulated on the basis of the general guidelines derived from expectancy theory literature. The analyses of the findings were made on two seperate dependent variables: (a) course performance and (b) self-rated effort.

1- An expectancy theory model that combines both ability and motivational variables will yield significant multiple correlations with course effort and performance. Also, the model using both ability and motivation will predict criteria better than when using either predictor alone.

2- The ability component will correlate more highly with both course effort and performance than will any of the motivational components. However, rela-

tively speaking, ability will correlate more highly with course performance where motivation will correlate more highly with course effort.

Methods

Sample

The total sample cosisted of 314 undergraduate students enrolled in beginning French, German and Spanish classes at The Pennsylvania State University. Of these, 102 participated in two phase pilot study[1] designed to try out newly constructed paper and pencil measures, and to obtain initial reliability data.

The original sample for the main sudy consisted of 271 students enrolled in 12 sections (4 each from French, German and Spanish) of introductory foreign language courses. The sections used from each language were randomly drawn from the overall number of sections offered in Fall, 1979. Because the main study collected information on a number of ability, motivational and course outcome variables, there were considerable missing data. The largest single contributor to missing data was in the area of ability measures, i.e., SAT scores, high school GPA's, etc. This reduced the original sample size from N= 271 to N= 222. It should be pointed out, though, that the majority of these 49 students who were either provisional, parttime or adjunct students who were simply sitting in the courses but not taking them for course credit. The further reduction from N= 222 to N= 212 represents students who were missing more than one variable, not counting ability. This criterion was arbitrarily adopted to insure that students involved in the analysis had essentially full data. Table 1 presents some summary

[1]For information on the procedure and results of the pilot study, see Appendix G.

data on the main study sample of N= 212.

Insert Table 1 about here

Although it was not possible to compare students who were eliminated because of missing data on the ability measures with those who were part of the main sample (N = 212), it was possible to see if a greater proportion was eliminated from one of the three languages than another. Using chi square analysis, the number of students (from the N = 49) eliminated from each of the three languages was not significantly different (X^2 = 1.75, df = 2, NS).

Another concern involving the characteristics of the sample had to do with whether there were any systematic differences among the students populating the different languages, since the main study analyses involved combining all students together. Of primary interest was whether the abilities of the students were different. Table 2 presents some summary ability information for the three languages.

Insert Table 2 about here

In general, the students in the Spanish sections tended to be more able, although not significantly so. The only exception to that was on the SAT-M where the German students had significantly high scores. This finding might be explained if one assumes that students majoring in science tend to use German more often as their foreign language and science students tend also to be better in math. Overall, however, the students in each of the three introductory foreign language courses appear to be quite similar in terms of

ability.

Independent Variables

There are two independent components 1) ability and 2) Motivational variables.

1) Ability. Ability measure was the overall predicted grade point average (GPA) as established by the undergraduate admission office of The Pennsylvania State University. Predicted PSU- GPA is determined by combining high school GPA with SAT-V and SAT-M scores in a multiple regression prediction equation.

2) Motivational Variables

Anticipated Effort. Anticipated effort (AE) is a motivational indicator of how much time students feel they plan to spend studying during the course. Data were collected at the beginning of the course by a means of a questionnaire designed to assess students' study plans (Appendix A). Students' responses to item 1 were scored on a scale of 1 (0-2) to (14 or more), while item 2 was scored based simply on the number of days (1-7) they expected to study each week. Scores from items 1 and 2 were summed together to yield a fianl AE score. Maximum AE score was 15 and minimum was 1.

Valences. Two valence estimates were important to the present expectancy theory model. The first was valence of first level outcomes[2] (Vlst) and represented how desirable students felt it was to put a reasonable amount of effort into tasks that were considered to be important for successfully completing the course (Appendix B). For each task on the questionnaire, students received from 1 (Very Undesirable) to 5 (Very Desirable) and then the scores

[2]First level outcomes were logically developed by the author.

for all 5 items were summed together to arrive at an overall V1st score. Maximum and minimum V1st scores were 25 and 5, respectively.

The second was the valence of second level outcomes[3] (V2nd) and represented how desirable students felt certain outcomes of taking an introductory foreign language course were (Appendix C). For each outcome listed on the questionnaire, students received from 1 (Very Undesirable) to 5 (Very Desirable) and then scores for all 9 items were summed together to arrive at an overall V2nd score. Maximum and minimum V2nd scores were 45 and 9, respectively.

Expectancy. Expectancy (E) referred to the perception of the student about whether he/she felt that if he/she expended a reasonable amount of effort, that he/she would be able to satisfactorily complete the course task requirements (first level outcomes). That is, expectancy referred to whether the student felt he/she could do what was required of him/her in the course, assuming that he/she put forth reasonable effort (Appendix D). For each course task listed, students received from 1 (Definitely Not) to 5 (Most Definitely) and then scores for all 5 items were summed together to arrive at an overall expectancy score. Maximum and minimum E scores were 25 and 5, respectively.

Instrumentality. Instrumentality (I) referred to the perception of the students as to the relationship between satisfactory completion of the course task requirements (First Level Outcomes) and desirable course outcomes (Second Level Outcomes). Stated another way, this referred to whether the students saw that their completion of course tasks would be instrumental to their obtaining certain outcomes of taking the course (Appendix E). For each course

[3]Second level outcomes were generated by students in the pilot study (see Appendix G).

outcome listed on the questionnaire, students received 1 (Definitely Disagree) to 5 (Definitely Agree) and then scores on all 9 items were summed to obtain an overall I score. Maximum and minimum I scores ranged from 45 to 9.

Dependent Variables

1) Self-Rated Effort. Self-rated effort (SRE) represented an estimate by the students of how much time they actually did spend studying during the course. Thus, whereas AE was more of a motivational indicator of willingess to spend time, SRE was more of a cognitive estimate of actual time expended. SRE was administered at the end of the course. The items used in measuring SRE were the same as those used to measure AE, except the instructions were phrased in the past rather than the future tense (Appendix F). Scores on each item (1 to 8 on the hours per week and 1 to 7 on the days per week) were added together to obtain an overall SRE score. SRE values had a possible range from 1 to 15.

2) Course Performance: Performance in the introductory foreign language courses was expressed as a final percentage. The final percentage (which, in the course, was then converted into a letter grade) was based on a weighted combination of quizzes, midterm exams, class participation and attendance plus final exams.

Procedure

Of the approximately 15, 10 and 20 sections of introductory French, German and Spanish, respectively, taught during Fall term 1979, four were selected at random from each language, other than those used in the pilot study, Table 3 shows a breakdown, by language and sex, of the sample used in the main study.

Insert Table 3 about here

During the early part of the second week of Fall term 1979, all students in the 12 sections of introductory French, German and Spanish were given a booklet containing the following measures: (1) Informed Consent Form, (2) Background Information Sheet, (3) Anticipated Effort (AE), (4) Valence of First Level Outcomes (Vlst), (5) Valence of Second Level Outcomes (V2nd), (6) Expectancy (E), and (7) Instrumentality (I). Students were told that participation was voluntary. Any questions students had concerning the study were answered. Completion of the booklet of materials/measures took approximately 10-15 minutes. During the last week of Fall term, data on the self-rated effort measure were collected. Completion of this took less than 5 minutes time.

After the administration of material at the beginning of the term, a master list was made containing all students' social security numbers and this list was forwarded to the Undergraduate Research Section of the Office of Student Affairs to obtain ability data.

Results

Descriptive Data

Table 4 presents the means and standard deviations of the major independent and dependent variables used in the expectancy theory model to test the study hypotheses. Table 5 presents the intercorrelations among the same independent and dependent variables.

Insert Tables 4 and 5 about here

There are several points concerning the intercorrelations that should be briefly mentioned. First, the motivational measures, with the exception of anticipated effort (AE), correlated positively and moderately with each other indicating that they were tapping a similar motivational construct. However, AE seemed to be measuring something somewhat different from the other four motivational variables. Second, in general, the ability independent variable correlated most highly with the final percentage dependent variable (course performance) whereas the motivational independent variables correlated most highly with the self-rated effort dependent variable. Third, and finally, self-rated effort and final percentage correlated significantly but negatively with each other indicating that students who said that they spent greater amounts of time studying in the course did less well on final course grades.

Reliability of Measures

There were two main concerns related to reliability that seemed to be important. First, the reliability of course grades was important because course grades represented a major dependent variable. Second, the reliabilities of the motivational measures were important because these questionnaires were specifically designed for use in this study. Although the pilot data suggested that the motivational variables would be sufficiently reliable, it was important to recheck this with the main study data.

Midterm Tests

Since it was not practical to estimate the reliabilities of all the components that entered into the composition of the final percentage grades in the introductory foreign language courses, it was feasible to estimate reliabilities

for a sample of midterm tests. Since the largest weight in the final percentage grade was given to midterm test performance (about 40%), it was felt that the reliability of the midterm tests would be a reasonable estimate of the reliability of the overall grade. However, since the midterm test was only one part of the final percentage, the reliability of the final percentage grade would be expected to be even higher. This assumes, of course, that variables like quiz scores also have reasonable reliabilities and, also, are positively correlated with midterm tests.

One section from each of the three languages was selected to estimate reliabilities. The procedure used to estimate reliability was coefficient alpha. However, in the present case, there was a problem in the calculation of alpha. The formula for alpha requires that one be able to calculate individual item scores for each student. Because of the particular scoring procedure used by the language departments, knowing how many points the instructor gave to each student on each item was generally difficult and, in some cases, impossible to calculate. For all tests, though, it was possible to know what each student received (in terms of points) for each subpart of the midterm tests. In the case of the German and Spanish midterms, each had nine subparts. For French, there were 13 subparts. Therefore, initially, each test was considered to have the same number of items as subparts. Alpha was then calculated on this basis. After this was completed, the Spearman-Brown prophecy formula was used to adjust the reliabilities based on increasing the length of the number as subparts to the total number of items on the midterm tests. In doing this, the adjusted reliabilities were probably overadjusted because the subpart scores were probably more stable than individual item scores. That is, if 9 <u>items</u> (or 13), not

subparts, had been selected at random to calculate reliabilities and then the Spearman-Brown adjustment made, the alpha values would likely have been somewhat lower. Table 6 presents the estimates of the midterm reliabilities for the three language tests. In general, it appears that the midterm tests had satisfactory reliabilities and therefore the overall final percentage grades should be at least as reliable but, most likely, even more reliable.

Motivational Scales

The reliabilities of the motivational measures used in the main study were also estimated by coefficient alpha. Since reliability is primarily a function of the number of items, not students, reliabilities were estimated from a sample of the total N = 212 students in the main study. For each of the 12 sections, five questionnaries were selected at random making a total of N = 60 in the reliability sample. Table 7 presents the results of this analysis. Considering the generally short length of the measures, the motivational variables appeared to have had satisfactory reliabilities.

Insert Tables 6 and 7 about here

Test of Hypotheses

Hypothesis 1

Standard packaged computer programs using multiple regression anaylsis procedures were used to test hypothesis 1. Hypothesis 1 states that the expectancy theory model will yield significant multiple correlations with the course criteria and, also, using both components (ability and motivation) would produce higher multiple R's than using each component separately. Recall, SRE

was measured with a questionnaire administered at the end of the term whereas course performance was the final percentage grade earned in the course. Since there are one ability variable, and two dependent variables, SRE and final percentage grade, this would lead to two multiple regression equations. They were:

1. Ability plus motivation predicting SRE
2. Ability plus motivation predicting final percentage

Tables 8 and 9 present the results from the multiple correlation analysis for each of these four expectancy theory model situations.

Insert Tables 8 and 9 about here

There are several important points to be seen from Tables 8 and 9. First is the fact that SRE was better predicted (R=.70) than final course percentage (R=.38). A second point is adding ability and motivational components together did not augment the prediction of the course criteria. For predicting SRE, the regression weights that were different from 0 are those for AE, Vlst, and E, motivational components. Of these three, AE stands out as having the largest weight by far. Although not all of the five motivational components added significantly to the prediction of self-rated effort, ability definitely did not contribute. In terms of predicting final course percentage, Table 8 shows that Ability is the only significant contributor to prediction. Thus, considering Ability as a component of the model, it can be summarized by saying that only motivational components contributed to the prediction of the motivational-type criterion, SRE, whereas only Ability contributed to the prediction of the cognitive-type criterion, final course percentage.

Hypothesis 2

Hypothesis 2 stated that the ability component would do a better overall job of predicting both the criteria but, relatively speaking, ability would correlate more highly with final course percentage whereas the motivational components would correlate more with SRE. Results showed that correlations between ability and SRE and Final course percentage were .11 and .36, respectively. While, disregarding the signs of the correlations, the approximate average values of the motivational predictors with SRE and final course percentage were .28 and .10, respectively (Table 5). Obviously, this part of Hypothesis 2 was not supported. Even if one considers the correlations between AE and SRE of .66 to be high because both measures were essentially the same, the approximate average correlation of the motivational predictors with SRE would still be .19 even if the .66 was totally excluded. As for the last part of hypothesis 2, results showed that ability predicted course final percentage better than SRE (R=.36 and .11), while motivational predictors correlated higher with SRE than final course percentage (average R .28 and .10) (Table 5). Therefore, data presented provide support for the last part of hypothesis 2.

Summary and Discussion

Summary of the Results

The present study was designed to assess the effectiveness of an expectancy theory model in predicting effort expended and achievement in introductory foreign language courses. According to the literature, both ability and motivational variables should be useful components to incorporate into the model. However, there is very little empirical data utilizing

both ability and motivational components in the prediction of criteria. In addition, little data of any sort have been reported where expectancy theory models have been applied in the context of prediction of academic performance. Thus, while one major purpose of the present investigation was to incorporate both ability and motivational components into the same model, a second major purpose was to utilize the expectancy theory model in an academic area where it has not been tried as yet -- that being prediction of performance in foreign language courses.

The following is a brief listing of the most important results found in the present study.

1. The students taking the introductory foreign language courses (German, French, Spanish) were above average academically.
2. The motivational measures, with the exception of AE, correlated positively and moderately with each other.
3. The motivational measures developed for the present study were found to be reasonably reliable, especially when considering their length.
4. Midterm test, the major part of final course percentage, were found to be quite reliable.
5. Ability measure correlated significantly with final course percentage but not with SRE. In multiple regression analyses, ability did not add to the prediction of SRE over simply using the ability components of the model.
6. Motivational measures correlated significantly with the SRE criterion

but not with final course percentage. In multiple regression analyses, motivation did not add to the prediction of final course percentage over simply using the ability components of of the model.

7. Ability did not correlate more highly with both SRE and final course percentage than did any motivational component of the model.

Disscussion

Ability and Motivational Variables

In the present study, the Ability measure was Predicted Penn State Point Average that was determined by a multiple regression equation combining students' High School Grade Point Average (for academic subjects) with both SAT-V and SAT-M. Table 5 shows that ability correlated with performance better than with SRE (.36 - .11), respectively.

With the exception of the anticipated effort variable, the motivational measures correlated moderately and positively with one another. Since valence of the first and second level outcomes, expectancy and instrumentality all are related to course tasks or course goals, this finding seems reasonable. In particular reference to the correlation between expectancy and instrumentality (r=.41), the present data seem to be relatively consistent with the literature (Porter & Lawler, 1968, r=.64; Pritchard & Sanders, 1973, r=.32). The finding that anticipated or intended effort correlated much lower with the other motivtional measures is not surprising. Asking students to indicate, in advance, the amount of time they plan on studying seems to be a somewhat different question from asking them how desirable certain course tasks and goals are, or whether they see a connection between what they do in the course

and the achievement of goals. Actually, although the relationship between anticipated effort and the other motivational variables seems reasonable, the organizational expectancy research really doesn't provide a base with which to compare the present results. This appears to be the first study actually to measure anticipated or intended effort in an academic setting, although Mitchell and Nebeker (1973) did ask students about their attitude toward effort expenditure and asked students to rate the extent to which they had control over their time to study. Unfortunately, Mitchell and Nebeker did not report zero order correlation between either of their two related effort measures and self-rated effort, i.e., one of the criteria.

Expectancy Theory Predictions

Although Vroom (1964), Porter and Lawler (1968), and Galbraith and Cummings (1967) have suggested that ability is a general component of a complete expectancy theory model, there has been mixed success when including it for predicting task performance. In some cases, the addition of ability improved overall prediction of task performance while in others it made no additonal contribution. In the academic setting study by Mitchell and Nebeker (1973) though, only the ability variable predicted performance ($r=.57$, $p<.01$), i.e., the self-reported last term grade point average. The motivational components in the model did not add to this prediction. However, the motivational measures did correlate with self-rated effort ($r=.51$, $p<.01$), although no mention is made of whether ability added to that prediction. In the present study, a similar pattern of results was found. The motivational measures, primarily anticipated effort, predicted self-rated effort and ability added

nothing to that prediction. For predicting performance, ability was the significant predictor whereas the motivational components added nothing. The fact that the motivational components did not add to the prediction of course performance was not as predicted. This is further complicated by the finding that self-rated effort and final percentage correlated significantly but negatively with each other.

The finding that the motivational components did not add to the prediction of final percentage might be explained by the fact that for the majority of students, this could not be considered an introduction to foreign language. Since most students has considerable high school foreign language background, they might have had other reasons for taking this course, such as taking an easy course or simply offering a chance for review. Since they know that the course would not be difficult for them, they tended to give lower self-rated effort ratings. This simply reflected the fact that they did not have to study as much. Also, since they had previous background in the language, it put them at a decided advantage over the few students who had little or no previous experience. This would account for the negative correlation between self-rated effort and final course percentage. In addition, it might also suggest that there was not a more typical range of true motivational differences in the sample. That is, with all that background exposure to high school foreign language for the typical student, the average reason for taking the course might not have been to achieve a greater variety of second level outcomes. Therefore, the fact that the typical student may or may not have seen the expectancy or instrumentality relationship perhaps was irrelevant in this context. It will be important for future research to try to use an academic situation where such previous background

might not mask potential relationships between motivational components and course performance.

In addition, the literature review supports the conclusions that anticipated or intended effort, actual effort and performance will be predicted with decreasing accuracy by expectancy. For example, Turney (1974) found that expectancies correlated .44 with desired effort (i.e., anticipated effort), .30 with actual effort and .19 with performance. Also, Lawler (1964) reported a correlation of .34 between expectancy and effort and a correlation of .15 between expectancy and performance. However, the present study does not follow the same trend, expectancy correlated -.04 with anticipated effort, -.14 with self-rated effort and .13 with performance. With instrumentality predictions of effort and performance, though, the present findings appear to be in agreement with other research findings. For example, Lawler and Porter (1967) found that insstrumentality correlated .18 with actual effort and .11 with performance. In the present study, the comparable correlations were .23 with self-rated effort and .04 with performance.

As for the relationship between valence and course performance, the present study found correlations of .15 with valence of first level outcomes and .08 with valence of second level outcomes. The low predictive power of the valence measure is consistent with data presented by other researchers (Sheth & Talarzyk, 1970; Cohen & Ahtola, 1971).

Significance of the Study

The primary significance of the present study is that this appears to be the first study that has applied an expectancy theory model to the area of pre-

diction of foreign language learning. Since there are very few studies reported using expectancy theory models in academic settings, it is hoped that not only will the present investigation add to the literature in instructional environments but, in particular, will provide researchers in the area of foreign language learning a base on which to build.

In addition, even though the students in the present study had considerable foreign language learning experience and hence perhaps were not as differentially motivated to learn material in an introductory course, the use of an expectancy theory model is important because it stresses motivational components. Motivational components are still considered important in foreign language learning repetitive practice work. For such tasks, motivation becomes an important ingredient in the learning process because perseverance is especially important to success.

Finally, it is hoped that methodology used in the present study including the motivational measures developed and the regression anlyses performed will provide a model in its own right for future researchers in this area. Ideally, the general strategy employed here can be utilized in other foreign language settings and with other independent and dependent variables considered to be potentially interesting to explore.

Suggestions for Future Research

Given the results from the present study, the following areas of future research are suggested.

1. First and foremost would be to replicate the present study using either a junior high school or senior high school sample of students who are

just beginning to study foreign language. It would be important especially to see what changes, if any, occurred between the motivational predictors and the course performance criterion. It would be hypothesized that motivational components should correlate more highly with course performance in a sample of students who are just beginning to learn a foreign language.

2. Second, it might be worthwhile to replicate the study on a different sample of languages. For example, some people suggest that a language like Spanish is relatively easy to learn compared to something like Russian. Although ability is important in learning any foreign language, motivation or perseverance becomes increasingly more important in languages that are difficult to learn.
3. Although it was not a purpose of the present study, it might be instructive to develop a measure of "attitudes toward foreign language" and add it to the motivational components in the expectancy theory model. It might be argued that a measurement of this type of individual difference variable might more accurately tap the extent to which a student views the language as being useful and, therefore, would better reflect their willingness to expend considerable effort to satisfactorily complete a foreign language course.
4. And finally, it also might be interesting to explore the expectancy theory model in a longitudinal study. For example, while the motivational components were found to be ineffective for predicting initial foreign language course performance, it might be found that they become more important in influencing or determining which students continue to study foreign

languages. That is, variables such as valence of second level outcomes and instrumentality might add to the prediction of students' performance in later foreign language courses or the number of additional courses that one student takes.

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Appendix A

Study Plans

Directions: Please indicate your answers to the following questions.

1. At this point in time, approximately how many <u>total</u> hours, per week, do you think you will spend on studying for this foreign language course? (Do <u>not</u> include class time).

	Check One:
0 - 2	_____
2 - 4	_____
4 - 6	_____
6 - 8	_____
8 - 10	_____
10 - 12	_____
12 - 14	_____
14 or more	_____

2. Considering the full study week to be 7 days, how many of these do you think you will spend some time studying this foreign langauge?

Sunday	_____
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____

Appendix B

Valence of First Level outcome

Please rate each of the following as to how willing you are to spend time and effort in order to complete the requirements of the course. Remember, what is being asked for here is your feeling of positiveness towards doing each of the following tasks.

Task	Your Rating of the Desirability of Doing Each				
	Very Desirable	Somewhat Desirable	Neutral	Somewhat Undesirable	Very Undesirable
1. Studying Vocabulary					
2. Reading Comprehension					
3. Listening Comprehension					
4. Grammar & Writing					
5. Translating Material Other Than Passages in the Text					

Appendix C

Valence of Second Level Outcome

Many students report that there are positive outcomes (goals) of taking and doing well in a foreign language course like this one. Some of the more common outcomes or goals are listed below. Please rate how desirable these outcomes are <u>to you</u>. Please put a check mark next to each outcome (goal) according to how important if is for you.

Outcome (Goal)	Rating				
	Very Desirable	Somewhat Desirable	Neutral	Somewhat Undesirable	Very Undesirable
1. Being able to communicate better with people (in general					
2. Helpful for personal travel to other countries (pleasure)					
3. Helpful in obtaining or keeping a job (business related)					
4. Learn about other cultures					
5. Fulfilling specific degree or credit requirements					
6. Helps me learn more about English					
7. For reading foreign material (articles, books, etc.)					
8. It broadens my general education (more rounded person)					
9. I find pleasure and satisfaction in studying foreign language					

Appendix D

Expectancy

Please indicate for each of the following whether, if you expend a reasonable amount of effort, that you feel you will be able to complete each of the following satisfactorily.

Task	If I Put Forth A Reasonable Amount of Effort I will be Able to Complete Satisfactorily.				
	Most Definitely	Fairly Sure	?	Probably Not	Definitely Not
1. Studying Vocabulary					
2. Reading Comprehension					
3. Listening Comprehension					
4. Grammar & Writing					
5. Translating Material Other Than Passages in the Text					

Appendix E

Instrumentality

It has previously been mentioned that foreign language learning involves a number of course requirements or tasks: studying vocabulary, reading comprehension, listening comprehension, grammar and writing, and translating material other than passages from the text. Consider all these together. How likely or probable is it that your successful completion of these course requirements or tasks will allow you to achieve each of the following course outcomes or goals? That is, in your opinion, is there a connection between your satisfactorily completing the course requirements and the obtaining of the goals?

Outcome (Goal)	Satisfactorily Completing the Course Task Requirements Will Allow Me to Achieve the Course Outcomes or Goals				
	Definitely Agree	Somewhat Agree	Neutral	Somewhat Disagree	Definitely Disagree
1. Being able to communicate better with people (in general)					
2. Helpful for personal travel to other countries (pleasure)					
3. Helpful in obtaining or keeping a job (business related)					
4. Learn about other cultures					
5. Fulfilling specific degree or credit requirements					
6. Helps me learn more about English					
7. For reading foreign material (articles, books, etc.)					
8. It broadens my general education (more rounded person)					
9. I find pleasure and satisfaction in studying foreign language					

Appendix F

Self-Rated Effort

1. Please estimate, as best you can, approximately how many total hours, per week, you spent in studying for this foreign language course. (Do not include class time).

Check One:

0 - 2	_____
2 - 4	_____
4 - 6	_____
6 - 8	_____
8 - 10	_____
10 - 12	_____
12 - 14	_____
14 or more	_____

2. On the average, how many days (out of 7) per week did you devote at least some organized study time for this foreign language course? Indicate the typical days you would have studied?

Sunday	_____
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____

Appendix G

Pilot Study

Pilot Study - Phase I

The three purposes of Phase 1 of the Pilot Study were: (1) generation of the list of second level outcomes that were used in the V2nd and I measures, (2) to obtain preliminary information on the general characteristics of the sample to be used in the main study (Table 10), and (3) to obtain preliminary reliability data on the SRT dependent variable measure. Phase 1 pilot data were gathered at the end of summer term, 1979 by a means of a 3-part survey booklet (Appendix H).

Insert Table 10 about here

Generation of Second Level Outcomes

One part of the Phase 1 pilot work was to have students generate course outcomes that they thought were important, form their point of view. These were then classified and organized for use in the V2nd and I measures in the main study. Each student was asked to list 5 course goals as outcomes form taking one introductory foreing language course and, in addition, to indicate those that were very important to him/her. For the total group of N=47 students, 166 outcomes were listed. It should be pointed out that not every student listed 5 outcomes as requested. The outcomes were rewritten on small cards and then, separately and independently, sorted into reasonable categories by the author and one additional rater. Both raters generated 7 or 8 reasonably clear grouping with 2 or 3 somewhat ambiguous groupings.

After the independent groupings were completed, the raters together resorted the cards and resolved small differences of opinion. Seven of the cards were eliminated as being either unique (no other student listed it) or too broad (could fit in several categories). Table 11 presents the final listing along with the number of times each was listed and the percentage (out of 47) of students who stated that the outcome was very important to them.

Insert Table 11 about here

Reliability of SRE

Since an estimate of time spent in studying the course (SRE) was one of the dependent variables, it was necessary to obtain preliminary information on its reliability. It was important to assess whether it was reasonable to add the scores from both items (hours per week studied and days per week studied) together to get a composite score. The analysis showed that the correlation between the two items was .74 indicating that it was reasonable to sum the two scores to make a more dependable total score. Table 12 shows the Phase 1 pilot study data as the SRE measure.

Insert Table 12 about here

The procedure for estimating reliability was coefficient alpha, a measure of internal consistency. The more items intercorrelate positively with each other, the higher will be alpha. A coefficient of .85 indicates that both items are measuring the same underlying variable.

Pilot Study - Phase 2

The major purpose of Phase 2 of the Pilot Study was to try out the final motivational measures to be used in the main study and to assess their reliabilities and intercorrelations. The data base came from two randomly selected sections of the Fall term, 1979. (A copy of the measures is not included in the Appendix because each measure has already been presented there). Time required for completion of the questionnaries was approximately ten minutes.

Reliability of Measures

As can be from Table 13, the measures, with the exception of the V2nd, appeared to have sufficient preliminary reliabilities to warrant use in the main study, especially when considering the number of items in some of these scales. Since the larger sample in the main study should reflect greater variability, it was expected that reliabilities would improve.

Insert Table 13 about here

Intercorrelation of Motivational Measures

Table 14 presents the intercorrelations of the five motivational measures. Notice that the AE measure has low (but negative) correlation with the other measures. This might have been expected if one assumed that students who felt that they would have to spend larger amounts of time studying were the less capable students; they might be generally less positive about their perceptions of their own capablities.

Insert Table 14 about here

However, if the above is true, the AE measure does not seem to measure the same underlying motivational construct as do the other four measures. The other four measures, however, all correlate positively with each other and, wiht one exception, significantly. These four measures seem to be tapping a similar variable.

Summary of Pilot Data

The reliability information collected form Phase 1 and 2 suggested that the measures were tapping true individual differences and could be used satisfactorily in the correlational analyses in the main study. In addition, the intercorrelation data suggest that while four of the motivational measures (Vlst, V2nd, E, I) do seem to be measuring the same underlying construct, AE should add something unique to the prediction of foreign langauge course outcomes.

Appendix H

Pilot Study-Phase One

DIRECTIONS

The three brief surveys included here are for gathering some preliminary information for a study that will take place in the fall term. We would appreciate your cooperation in filling out these forms as accurately as possible. There is no need for you to put your name or student number on any of the forms. Thank you very much for your cooperation.

Background Information

Sex: M _____ F _____

Age: (in years) _____

Did you study FL in high school: Yes _____ No _____

If yes, what language: _____

If yes, how long: _____

Does anyone in your immediate family speak the foreign language you are now enrolled in: Yes _____ No _____

Have you ever travelled to a foreign country where the language you enrolled in was spoken: Yes _____ No _____

Outcomes From Taking a Foreign Language Course

In the spaces provided below, please list down 5 reasons why you think that taking a foreign language course like this one can be beneficial (helpful) to you in the future, either as soon as the course is over or after a longer period of time. That is, what are five important GOALS for taking a course like this one.

REASONS	CHECK IF REASON IS VERY IMPORTANT TO YOU
1. _____	
_____	____
2. _____	
_____	____
3. _____	
_____	____
4. _____	
_____	____
5. _____	
_____	____

Time Spent in Course

1. Please estimate, as best you can, approximately how many total hours, per week, you spent in studying for this foreign language course. (Do not include class time).

	Check One:
0 - 2	_____
2 - 4	_____
4 - 6	_____
6 - 8	_____
8 - 10	_____
10 - 12	_____
12 - 14	_____
14 or more	_____

2. On the average, how many days (out of 7) per week did you devote at least some organized study time for this foreign language course? Indicate the typical days you would have studied.

Sunday	_____
Monday	_____
Tuesday	_____
Wednesday	_____
Thursday	_____
Friday	_____
Saturday	_____

Title of Investigation: Expectancy Theory Prediction of Foreign Language Performance

Investigator: Anga A. Youssef

This is to certify that I, _____,
(please print)

agree to participate in a scientific study as an authorized part of the research program of The Pennsylvania State University. The study involves seeing whether certain ability and motivational variables are related to performance in the introductory foreign language courses. The motivational information will be gathered by several short questionnaires you fill out. The ability information will be obtained from your student folders. For the ability information, it will be necessary to use your SAT scores, your predicted GPA as determined by the admissions office, and possibly your grades from foreign language courses you took in high school. A summary of the results will be made available upon request after the completion of the study.

1. I have been informed of the nature of the study.

2. I have been given the opportunity to ask questions about the study.

3. I realize that I may decide not to answer specific questions on questionnaires.

4. I understand that any information of mine that either I fill in on survey forms or allow to be used from my student folders will be held as confidential information with regard to my identity.

5. I understand that I am free to withdraw from the study at any time upon such notification.

YOUR SOCIAL SECURITY NUMBER: _____

Today's Date: _____ Your Signature: _____

I was present when the above was explained and to the best of my knowledge, it was understood.

Date: _____ Signature: _____
(witness)

Table 1

Summary of Students' Characteristics Data on the Main Study Sample[1]

Characteristics		Total Group	$\bar{X}$
Sex	Male	104	
	Female	108	
Age			19.08
# years studied foreign[2] language in high school			2.69
Family members speak the foreign language		Y= 24 N=188	
Foreign countries visited where the language studied was spoken		Y= 64 N=148	
High school GPA			3.28
SAT-V			501.40
SAT-M			547.72

1 N=212
2 N=210

Table 2

Comparison of Students' Ability

Data for Each Language

	French		Spanish		German	
Variable	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
HS-GPA	3.33* (79)	.50	3.27 (64)	.49	3.23 (69)	.50
SAT-V	507.09 (79)	91.05	492.19 (64)	66.99	503.42 (69)	78.19
SAT-M[1]	541.14 (79)	108.92	528.44 (64)	75.18	573.14 (69)	89.37
Penn State Predicted GPA	2.90 (79)	.40	2.83 (64)	.38	2.86 (60)	.38

* Value in () = sample size. Differences within same column reflect missing data on some subjects on some variables.

[1] A significant difference was obtained between mean SAT-M scores between the Spanish and German groups ($t=3.129$, $df=131$, $p<.01$). No other differences were found.

Table 3

Breakdown of Main

Study Sample

Characteristic	Language			Total
	French	German	Spanish	
# Sections	4	4	4	12
Total N	79	69	64	212
Males	35	42	27	104
Females	44	27	36	108

Table 4

Descriptive Data on Major Independent and Dependent Variables Used in the Main Study -- Combined Languages

	Independent Variables						Dependent Variables	
Characteristic	Pred. PSU GPA	AE	V1st	V2nd	E	I	SRE	Final %
$\bar{X}$	2.87	8.33	18.74	35.76	21.94	36.10	7.16	87.47
S	.39	2.17	3.11	4.21	2.68	4.56	2.54	9.23
N	212	212	212	212	212	212	202	210

Table 5

Intercorrelations of Major Independent and Dependent Variables Used in Main Study [1]

	Pred. PSU GPA (1)	AE (2)	Vlst (3)	V2nd (4)	E (5)	I (6)	SRE (7)	Final % (8)
1	1.00	- .04	.12	.06	.19*	.06	- .11	.36*
2		1.00	.17*	.14*	- .04	.21*	.66*	- .08
3			1.00	.43*	.39*	.41*	.22*	.15*
4				1.00	.41*	.74*	.15*	.08
5					1.00	.41*	- .14	.13
6						1.00	.23*	.04
7							1.00	- .18*
8								1.00

[1] Bivariate sample sizes ranged from 197 to 212 due to missing data for some students on some variables.

* Correlation significantly different from 0 at .05 level or less.

Table 6

Reliabilities of Midterm

Course Tests

Language	Number Students	No. Parts on Test	Number Items	Reliability of Parts	Adjusted r_{xx}
German	19	9	45	.35	.73
Spanish	26	9	63	.90	.98
French	27	13	90	.70	.94

Table 7

Reliabilities of Motivational Measures Used in Main Study

Measure	Number of Parts	Sample Size	r_{xx}
AE	2	60	.74
V1st	5	60	.81
V2nd	9	60	.78
E	5	60	.86
I	9	60	.75
SRE	2	51[1]	.73

[1] The smaller sample size for SRE reflects an attrition of 9 students from the beginning to the end of the term.

Table 8

Multiple Correlation Analysis Using
the Expectancy Theory Model to Predict
SRE and Final Course Percentage

Model Components	R^2	R	F	df	Prob.
1. Ability + M -> SRE	.4910	.7007	31.35	6,195	<.0001
2. Ability + M -> FZ	.1479	.3846	5.87	6,203	<.0001

Table 9

Multiple Regression Equations for the SRE and Final Percentage Criteria Using Ability 1 and the Motivational Variables

		Ability	Motivational				
	Intercept	Predicted PSU GPA	AE	V1st	V2nd	E	I
SRE[1]	2.21	- .38	.69	.12	.00	- .20	.06
t Value[2]	1.40	-1.10	11.04	2.51	.02	-3.46	1.46
P	.16	.27	.00[3]	.01	.98	.00	.15
Final %	59.09	8.22	- .30	.18	.18	.13	- .15
t Value	8.11	5.23	- 1.03	.80	.83	.49	- .72
p	.00	.00	.30	.43	.41	.63	.47

1 The predicted value for a criterion variable is found by substituting the actual values on each variable plus the intercept.

2 The t value is for the hypothesis test that intercept or regression weights are 0.

3 Any p of .00 means <.01; that is, there was less than a 1% chance of rejecting the hypothesis of a 0 intercept or regression weight if H_0 had been true.

Table 10

Students' Characteristics of Phase I Pilot Sample

Characteristics	Total Group	Range	$\bar{X}$	Mode
Size	47[1]			
Sex: Male	21			
Sex: Female	26			
Age		17-53	20.47	18
# years studied foreign language in high school		0-5	3.34	3 or more

[1] From the different courses: Spanish n=20, French n=18. German n=9.

Table 11

Course (Second Level) Outcomes

Outcome	N[1]	# Important	% Thought Important
Increased Communication	27	11	41
Travel	26	10	38
Broaden Education	21	9	43
Helpful for Job	21	11	52
Fulfills Requirement	16	8	50
Learn About Other Cultures	16	6	38
Learn More About English	14	5	36
Pleasure and Interest in Studying Foreign Language	11	4	36
Read Foreign Literature	7	2	29

[1] Total N=166 but 7 were eliminated. Thus groupings are based on N=159.

Table 12

Summary of Phase 1 Pilot

Data on SRE Measure[1]

Characteristics	Value
$\bar{X}$	7.15[2]
s	2.88
r_{xx}	.85[3]

1 N=47

2 This average is based on the sum of the scores for two questionnaire items; a score of 1-8 based on the number of hours spent studying each week and a score of 1-7 based on the number of days studied per week. These two values were summed together.

3 Reliability was assessed by the internal consistency measure, alpha.

Table 13

Summary Data on the Five Motivational Measures

Used in Phase 2 of the Pilot Study (N=55)

Characteristic	Measure AE	Vlst	V2nd	E	I
$\bar{X}$	8.49	17.76	33.54	21.09	35.33
s	2.84	3.76	3.91	3.15	4.39
r_{xx}	.76	.80	.51	.87	.69
Number Items	2	5	9	5	9

[1] Reliability estimated by coefficient alpha.

Table 14

Intercorrelations of the Five Motivational Measures

	AE (1)	V1st (2)	V2nd (3)	E (4)	I (5)
1	1.00	- .06	- .14	- .27	00
2		1.00	.45**	.13	.47**
3			1.00	.42**	.51**
4				1.00	.59**
5					1.00

** Significantly different from 0 at .01 level